

Amendments to the Specification:

Please replace paragraphs [0005], [0023] and [0033] with the following:

*Please enter
all M.T.
1/16/04*

[0005] In many semiconductor applications, formation of conductive bumps or other external conductive elements on the bond pads of a die is desirable, if not necessary, to connect the die to external conductors. The most common applications where conductive bumps or other elements are used include tape automated bonding (TAB), flip-chip attachment of a die to a carrier substrate, and direct chip attachment (DCA) of a die to a carrier substrate. Conductive bumps may comprise metals or alloys including, without limitation, conventional ~~tin/lead~~ tin/lead solders, or may comprise conductive or conductor-filled epoxies, all as known in the art. Formation of the conductive bumps used in these applications can be accomplished using a variety of commonly known methods, such as deposition onto bond pads by screening or printing, preform ball or bump placement, or ball bumping using wire bonding equipment to form each individual bump *in situ*.

[0023] Semiconductor substrate 10 may comprise a wafer, as defined above, including a plurality of individual die locations thereon. The bond pads 12 are "bumped" with intermediate conductive elements 20 which project upwardly from active surface 14, or some or all of the input/output locations for each die are redistributed using conductive traces prior to being bumped, such processes being well known in the art. If the external conductive elements (see below) are metallurgically incompatible with bond pads 12, the intermediate conductive elements 20 may be of a layer or layers of metals which will provide a better metallurgical bond therebetween. One such example, in the case of Al bond pads and ~~tin/lead~~ tin/lead solder external conductive elements, would be to form intermediate conductive elements 20 of three superimposed layers (top to bottom) of copper, copper/chromium alloy, and chromium. It is also contemplated that the bond pads 12 may be bumped using a wire bonding capillary, or with solder of a higher melting temperature than that of another solder to be employed in external conductive elements 32, as referenced below. Intermediate conductive elements 20 may also comprise a conductive or conductor-filled epoxy, such as a silver-filled epoxy. The only

Serial No. 09/917,127

said layer of encapsulant material has a pattern of depressions over said channels and a portion of said at least one intermediate conductive element is exposed through and coplanar with said surface of said layer of encapsulant material." Applicants respectfully submit that the above limitation of claim 1 is, in fact, clearly described by the as-filed specification as required by 35 U.S.C. § 112, first paragraph. The original specification describes at paragraph [0033] that:

FIG. 2 depicts how encapsulant material 30 may be applied to both the active surface 14 and the back side 22 of semiconductor substrate 10 in a substantially conformal manner so as to fill in channels or troughs 26, but not to overfill same to the point of being level with the top surfaces of intermediate conductive elements 20. The depressions of the encapsulant material 30 over channels or troughs 26 are useful in that during the dicing operation, the recessed portions of encapsulant material 30 over channels or troughs 26 provide alignment guidance for the dicing of the substrate 10 into discrete semiconductor devices 34.

The application of encapsulant materials to semiconductor substrates in a conformal manner is well known in the art, and paragraph [0033] sufficiently describes how such encapsulant material may be applied to form depressions as recited in claim 1. "If a skilled artisan would have understood the inventor to be in possession of the claimed invention at the time of filing, even if every nuance of the claims is not explicitly described in the specification, then the adequate description requirement is met." M.P.E.P. 2163 (citing *Vas-Cath, Inc. v. Mahurkar*, 935 F2d 1555, 1563 (Fed. Cir. 1991)). Furthermore, the structure of a depression as recited in claim 1 is clearly illustrated in FIG. 2, as originally filed. "[D]rawings alone may provide a 'written description' of an invention as required by Sec. 112." *Id.* Based on the description at paragraph [0033] and the structure illustrated in FIG. 2, the specification also clearly sets forth the manner and process of making and using the invention to satisfy the enabling requirement. "All that is necessary is that one skilled in the art be able to practice the claimed invention, given the knowledge and level of skill in the art." M.P.E.P. 2164.08.

TRASKBRITT

Intellectual Property Attorneys

FACSIMILE TRANSMITTAL SHEET

Total number of pages including cover letter: 2To: **Examiner M. Trinh**
U.S. Patent and Trademark OfficeDate: **January 14, 2004**Facsimile No.: **(571) 273-1847**

Telephone No.:

From: **Greg T. Warder**Serial No.: **09/917,127**Client/matter number: **2269-3572.1US**Group Art Unit: **2822**Message/Comments: **Attached is Page 11 from the 12/4/03 Amendment Under 37
C.F.R. § 1.116 in response to final office action dated October
16, 2003.**

Faxed by: _____ Date: _____ Time: _____

If you do not receive the complete document, please call (801) 532-1922 as soon as possible

CONFIDENTIALITY NOTE: The documents accompanying this facsimile transmission contain information from the law firm of TRASKBRITT, which is confidential and/or legally privileged. The information is intended only for the use of the individual or entity named in this transmission sheet above. If you are not the intended recipient, you are hereby notified that any disclosures, copying, distribution or the taking of any action in reliance on the contents of this facsimile information is strictly prohibited, and that the documents should be returned to this firm immediately. In this regard, if you have received this facsimile transmission in error, please notify us by telephone immediately so that we can arrange for the return of the documents to us at no cost to you.